

REMARKS

Claims 1, 3-4, 6-7, 10-13 and 16-43 are pending. Claims 1, 3-4, 6-7, 10-13, 16 and 38-43 are under active consideration. Claims 2, 5, 8-9, and 14-15 are canceled. Claims 1, 3, 6, 10, 12 and 16 are currently amended. Claims 42 and 43 are newly added.

The amendments to the claims are made solely to obtain expeditious allowance of the instant application. Amendment of the claims is made without prejudice, without intent to abandon any originally claimed subject matter, and without intent to acquiesce in any rejection of record. Applicant expressly reserves the right to file one or more continuing applications hereof containing the canceled or unamended claims.

Support for the amendments is found throughout the application, in particular, the original claims as filed as well as pages 20-22 (paragraphs 206-228) of the specification.

Entry of the claim amendments is respectfully requested.

CLAIM REJECTION—35 U.S.C. § 102

Claims 1 and 3-4 are rejected under 35 U.S.C. § 102(e) as being anticipated by Jacobson et al. (U.S. Patent No. 6,953,656). Applicants respectfully traverse this rejection.

Jacobson is cited for the description of chelating proteins such as phytochelatin or cationic polymers that are able sequester inorganic atoms, and form inorganic nanocrystals in solution. Column 8, lines 19-21. As amended the present claims specify that the nanoparticle is a semiconductor nanocrystal comprising a core surrounded by a shell. *In-situ* formation of inorganic nanocrystals *via* polychelatin or cationic polymers will not result in a semiconductor nanocrystal as claimed. Therefore, any tangential relationship of Jacobson to the present claims has been rendered moot. Withdrawal of the rejection is respectfully requested.

CLAIM REJECTION—35 U.S.C. § 103

I. Claims 5-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jacobson in view of Bawendi. Applicants respectfully traverse this rejection based on the following.

Jacobson is cited for its description of polychelatin or cationic polymers, which are used for *in-situ* formation of inorganic nanocrystals. Column 8, lines 19-21. According to the Office Action, “[i]t would have been obvious to one of ordinary skills in the art to use the nanocrystals with core and shell composition as taught by Bawendi in place of the nanocrystals of Jacobson because such shell provides functional groups for conjugation with proteins.” Page 3, penultimate paragraph.

Since Jacobson merely uses polychelatin or cationic polymers as scaffolding to build the nanocrystals *in-situ*, it is unclear how or why preformed nanocrystals from Bawendi could/would be used to supplant the inorganic nanocrystals in Jacobson. In fact, where Jacobson does mention a semiconductor such as cadmium selenide (column 5) there is no polychelatin or cationic polymer present since the particle is already formed.

A recent Supreme Court decision has warned that “[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR Intern. Co. v. Teleflex Inc.* U.S. 2007 (2007 WL 1237837 (U.S.), at 16, citing *Graham*, 393 U.S., at 36. As explained by the Court of Appeals for the Federal Circuit and the MPEP: If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). MPEP 2143.01.

Because Jacobson is describing polychelatin or cationic polymers simply as a tool for synthesis of inorganic nanocrystals, it would seem that preformed core/shell semiconductor nanocrystals in Bawendi would not solicit addition of the polychelatin or cationic polymer. Alternatively, if the argument is that one could form a Bawendi core/shell nanocrystal *in-situ* through addition of polychelatin and/or cationic polymers as described in Jacobson, Applicants respectfully request that supporting evidence be made of record, because to the best of Applicants knowledge, such synthesis has not been previously demonstrated.

II. Claims 1, 3-7, 11-13, 38 and 39 are rejected over admitted prior art in the present specification in view of Bawendi (U.S. Patent No. 6,306,610). In view of the amendment, applicants believe that this rejection has been rendered moot.

The Office Action cites pg. 53, line 10 of the specification that describes that Tat peptide has been used to introduce magnetic nanoparticles into mammalian cells. Applicants further note that the IDS included herewith provides a reference (Lewin et al.) that describes Tat peptide-derivatized magnetic nanoparticles. Previously it was thought that the Tat sequence was required as a membrane translocation signal to enter the cell. See Lewin, pg. 410, column 2, 2nd paragraph. Applicants have found that polycationic non-Tat sequences (new claim 42) having from 5 to 25 contiguous Lys and/or Arg residues (claim 1) can effect cellular uptake without the Tat-based sequence. This is surprising and unexpected, especially in view of references such as Lewin and Frankel, which are reliant on the specific Tat sequence for cellular uptake. Their reliance on sequence specificity teaches away from the non-Tat cationic polymers as claimed.

Accordingly, Applicants respectfully request withdrawal of the obviousness rejection to claims 1, 3-7, 11-13, 38 and 39.

III. Claims 8-10, 14-16, 40 and 41 are rejected over admitted prior art in the present specification in view of Bawendi and further in view of Frankel (U.S. 5,652,152). In view of the amendment, applicants believe that this rejection has been rendered moot.

Notably, Applicants have found that polycationic non-Tat sequences (claim 42) consisting of 5 to 25 contiguous Lys and/or Arg residues (claim 1) can cause cellular uptake without the Tat-based sequence. This is significant and unexpected, especially in view of references such as Lewin and Frankel, which are reliant on the specific Tat sequence for cellular uptake. There is no suggestion that modification of the Tat sequence to the polycationic polymer of the present claims would result in a transportable semiconductor nanocrystal as claimed. Accordingly, Applicants respectfully request withdrawal of the obviousness rejection.

CONCLUSION

In view of the above amendments and remarks, it is submitted that this application is now ready for allowance. Early notice to this effect is solicited. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned at (541) 335-0165.

Respectfully submitted,

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